WEST ANNAPOLIS
PARKING STUDY

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City of Annapolis

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June 25, 2002

Executive Summary

This study investigates the parking situation in the West Annapolis Business District and makes recommendations for improvements. The West Annapolis parking study limits comprise an eight-block area. The eight-block study area contains six apartments, 78,559 S.F. of retail space, 81,939 S.F. of office space, 118,506 S.F. of medical office space, 8,206 S.F. of restaurants, 1,146 S.F. of bank space, and an elementary school.

The parking supply in West Annapolis consists of 355 on-street parking spaces and 1,198 off-street spaces for a total of 1,553 parking spaces. The peak demand for parking within West Annapolis occurs between 2:00 PM and 3:00 PM. The total off-street parking occupancy in the study area was 79 percent, when 947 spaces of the total 1,198 **off-street** parking spaces were occupied. The **total study area on-street** parking demand reached 249 spaces or 70 percent of capacity of the 355 spaces available. Several blocks within the study experienced demands that exceeded the supply of parking spaces.

The future parking conditions were projected based on the known development planned in the study area. The proposed development plans will displace an existing parking lot and result in an overall parking supply **deficit** of 22 spaces for the entire study area. Additional development or redevelopment in the West Annapolis Area should be carefully considered to ensure that parking provided will meet or exceed the demand.

Recommendations have been made and can be implemented area wide or on a street-by-street basis. Some of the recommendations for mitigation include the following; parking limits, metered parking, Navy stadium parking, shuttle/transit, encourage shared rides and transit use residential parking permits, parking promotion, code enforcement/future development.

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1.0 INTRODUCTION

This report presents the results of a parking study for the West Annapolis Business District in the City of Annapolis, Maryland. This study investigates the parking problems in the West Annapolis Business District and makes recommendations for improvements.

The West Annapolis parking study limits, as defined by the City Staff, comprise an eight-block area. The neighborhood is defined by Tucker Street to the north, Taylor Avenue to the east, Roscoe Rowe Boulevard to the south and Monterey Avenue to the west, as shown on Figure 1. The study area contains a mix of uses including; residential, retail, office, commercial, and institutional land uses.

This study was undertaken to answer the following questions:

- What is the current parking usage within the West Annapolis Business District?
- What are the effects of the surrounding land uses on parking?
- What are the parking concerns of the area business owners and residents?
- How many parking spaces should be provided in West Annapolis to satisfy existing demand?
- How many spaces should be provided to satisfy future demands generated by new development or re-development?
- Will deficiencies in parking exist and where?
- Can existing parking policies be modified to alleviate current shortages?
- Should additional parking be provided, and if so, where and by whom?
- Should spaces be designated and operated as short-term (two (2) hours or less) customer and visitor spaces vs. long-term (more than four (4) hours) employee and resident spaces?

- How should the parking system be managed to ensure the appropriate balance of short- and long-term parking?

- What is the appropriate parking fee structure?

- Should the parking system be promoted, by signage, brochures, posted maps, etc.?

- Should the parking provisions of West Annapolis be amended with respect to base parking indices, size/density of development at which parking spaces must be provided, fees in lieu of constructing parking spaces, shared parking provisions, etc.?

- What role can transit play in reducing short- and long-term parking demands?

Sources of data for this study include the City of Annapolis Planning Department, the Urban Land Institute (ULI), the Institute of Transportation Engineers (ITE), field observations by Wells & Associates, and the files and library of Wells & Associates.

2.0 EXISTING PARKING CONDITIONS

2.1 Overview

This section presents an evaluation of existing parking conditions in West Annapolis. It includes a review of:

- Existing land uses.
- Existing on- and off-street parking supply.
- Existing parking demands within each block.
- Existing parking surpluses/deficits within each block.

2.2 Land Uses

West Annapolis contains a mix of commercial land uses. The eight-block study area contains six apartments, 78,559 S.F. of retail space, 81,939 S.F. of office space, 118,506 S.F. of medical office space, 8,206 S.F. of restaurants, 1,146 S.F. of bank space, and an elementary school, as shown in Table 1. These quantities are based on data provided by the City of Annapolis.

There are significant buildings just outside the study area limits that impact the parking demand within West Annapolis. These include the District Courthouse, the Department of Natural Resources, and the Courts of Appeal Complex, and are shown on Figure 1.

Medical office is the predominant office use in West Annapolis, including dental offices, general practice, sports medicine, and specialty practices. These are generally located along Forbes Street, Giddings Avenue, Ridgely Avenue, and Monterey Avenue.

There are several large general office users including one of the City’s largest civil engineering offices (McCrone, Inc.) located at the corner of Ridgely Avenue and Giddings Avenue. The remainder of the office space is comprised of small general office users, such

as insurance, real estate, and law offices, which are located throughout the study area.

The retail uses comprise a strip retail center anchored by Graul’s Market, small specialty retail stores, restaurants, a bank, and several hair salons. The majority of specialty retail space is concentrated along Annapolis Street. The strip retail center is located along Taylor Avenue.

Table 1

West Annapolis Parking Study
Existing Land Uses in West Annapolis, by Block (1)

Block	Land Uses					
	Apartments (D.U.)	Retail (S.F.)	Office (S.F.)	Med. Office (S.F.)	Restaurant (S.F.)	Bank (S.F.)
Block 1 (2)	0	0	0	0	0	0
Block 2	4	6,200	2,300	0	1,600	0
Block 3	0	1,500	0	0	2,632	0
Block 4	0	12,090	5,064	10,000	0	0
Block 5	2	17,410	26,103	16,163	0	1,146
Block 6	0	3,081	27,390	44,274	0	0
Block 7	0	600	15,726	42,713	0	0
Block 8	0	37,678	5,356	5,356	3,974	0
Total	6	78,559	81,939	118,506	8,206	1,146

Notes: (1) Land use information provided by City of Annapolis and research by Wells & Associates.
(2) Entire block occupied by West Annapolis Elementary School.

2.3 Parking Supply

The parking supply in West Annapolis consists of both on- and off-street spaces. A total of 1,553 parking spaces are located within West Annapolis, as shown in Table 2 and Figure 2.

The total **off-street** parking supply, consisting of private lots and garages, is 1,198 parking spaces. Seventy-seven (77) percent of the total parking (1,553 parking spaces) available are contained in off-street private lots and garages; 42 spaces on Block 2, 26 spaces on Block 3, 86 spaces on Block 4, 192 spaces on Block 5, 199 spaces on Block 6, 266 spaces on Block 7, 387 spaces on Block 8.

Generally, the **on-street** parking in the study area is not marked. Based on the Manual on Uniform Traffic Control Devices (MUTCD) a parallel parking space should be marked to provide between 22 to 26 feet in length. The available space for on-street parking was measured on both side of each street within the study area. Then assuming a 22-foot parking space length, the total on-street parking supply was determined to be 355 parking spaces. The measured distance did not include areas where parking would be restricted (i.e. driveways, intersections, fire hydrants etc.) Twenty-Three (23) percent or 355 spaces of the total parking supply (1,553 spaces) exists as on-street (or curb) parking spaces; 58 spaces on Block 1, 76 spaces on Block 2, 40 spaces on Block 3, 18 spaces on Block 4, 43 spaces on Block 5, 56 spaces on Block 6, 44 spaces on Block 7 and 20 spaces on Block 8.

There is one public parking lot near the West Annapolis Business District that provides, for a fee, parking for the City of Annapolis, the Navy Marine Corp Stadium parking lot with approximately 2,000 spaces, as shown on Figure 2. A portion of the Stadium parking lot is allocated for the District Courthouse building. The parking fee at the Stadium lot is a flat rate of $4.00 per day.

2.4 Parking Occupancy

Overview. Parking occupancy counts were conducted in the off-

street public parking lots and garages and the on-street parking by Wells & Associates, on Thursday, June 28, 2001 between 7:00 AM and 7:00 PM to assess the parking conditions.

Counts of the number of occupied and vacant parking spaces were recorded on an hourly basis in the off-street lots and on-street spaces, and are shown in Table 3. Summaries are shown in Figure 3.

It should be noted that the elementary school was in summer recess and that the parking occupancy counts do not reflect the school parking demand. Based on information provided by the City of Annapolis, the school has a staff of 40 people and an average of 5 volunteers at the school on any given day. The staff arrives at the school by 7:30 AM and leaves shortly after 3:00 PM. There is no off-street parking provided at the school. Staff and visitors park on Annapolis Street, Monterey Avenue, Melvin Avenue and Tucker Street. However, during the summer months Annapolis experiences a large influx of tourists, which results in a higher parking demand than the school. Therefore, to avoid double counting, no adjustments were made to account for school parking demand.

Detailed parking counts for the individual off-street parking (private lots) and on-street (curb parking) are contained in Appendix A. Based on parking count data, the peak demand for parking in the West Annapolis Business District occurred between 2:00 and 3:00 PM. The peak demand represents the time in which the highest number of parking spaces was occupied in a one hour period.

Practical Capacity

Based on the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI) data, as a “rule of thumb”, a parking facility is considered “full” when approximately 85 percent or more of all spaces are occupied. Some empty spaces are needed to accommodate normal parking turnover and to avoid extended searches for an empty space.

Eighty-five (85) percent occupancy would most appropriately apply to short-term (metered or non-permit) spaces and small parking lots, and 90 percent occupancy would most appropriately apply to large parking lots. Since the majority of off-street parking lots in West Annapolis are small lots, a practical capacity of 85

percent has been assumed for this study.

Table 2

West Annapolis Parking Study
Existing Parking Supply (Spaces), by Block

District	Private Off-Street (1)	On-Street (2)	Total
Block 1	0	58	58
Block 2	42	76	118
Block 3	26	40	66
Block 4	86	18	104
Block 5	192	43	235
Block 6	199	56	255
Block 7	266	44	310
Block 8	387	20	407
Total	1198	355	1553

Notes: (1) Based on data collected by Wells & Associates.
(2) On-Street parking supply based on field measurements.

Table 3
West Annapolis Parking Study
Existing Weekday Afternoon Parking Occupancy (Spaces), by Block

Time Period	Block 1 Private Off-Street	Block 1 On-Street	Block 1 Total	Block 2 Private Off-Street	Block 2 On-Street	Block 2 Total	Block 3 Private Off-Street	Block 3 On-Street	Block 3 Total	Block 4 Private Off-Street	Block 4 On-Street	Block 4 Total
Weekday Parking Occupancy Counts												
Parking Supply	-	58	58	42	76	118	26	40	66	86	18	104
Maximum Demand	-	20	20	42	43	83	25	26	46	46	27	72
Peak Hour Demand	-	15	15	32	39	71	24	20	44	46	26	72
Weekday Percent Occupancy												
Maximum Demand	-	34%	34%	100%	57%	70%	96%	65%	70%	53%	150%	69%
Peak Hour Demand	-	26%	26%	76%	51%	60%	92%	50%	67%	53%	144%	69%

Notes: (1) Based on data collected by Wells & Associates on Thursday, June 28, 2001..

Table 3 Continued
Existing Weekday Afternoon Parking Occupancy (Spaces), by Block

Time Period	Block 5 Private Off-Street	Block 5 On-Street	Block 5 Total	Block 6 Private Off-Street	Block 6 On-Street	Block 6 Total	Block 7 Private Off-Street	Block 7 On-Street	Block 7 Total	Block 8 Private Off-Street	Block 8 On-Street	Block 8 Total	Summary Private Off-Street	Summary On-Street	Summary Total
Weekday Parking Occupancy Counts															
Parking Supply	192	43	235	199	56	255	266	44	310	387	20	407	1198	355	1553
Maximum Demand	142	44	182	160	54	208	233	43	276	346	17	363	947	252	1196
Peak Hour Demand	136	42	178	144	49	193	219	41	260	346	17	363	947	249	1196
Weekday Percent Occupancy															
Maximum Demand	74%	102%	77%	80%	96%	82%	88%	98%	89%	89%	85%	89%	79%	71%	77%
Peak Hour Demand	71%	98%	76%	72%	88%	76%	82%	93%	84%	89%	85%	89%	79%	70%	77%

Off-Street Parking Spaces. As previously indicated, the counts shown in Table 3 indicate that the peak demand for parking within West Annapolis occurred between 2:00 PM and 3:00 PM. The total off-street parking occupancy in the study area was 79 percent, when 947 spaces of the total 1,198 **off-street** parking spaces were occupied. The off-street parking occupancy within Blocks 3 and 8 exceeded the 85 percent of capacity during this peak hour.

On-Street Spaces. On-street parking demand exceeded the 85 percent threshold within blocks 4, 5, 6, and 7 during the weekday peak hour. The **total** study area on-street parking demand reached 249 spaces or 70 percent of capacity (355 spaces) during this period. Block 4 exceeds 100 percent of capacity from 9am to 6pm. Block 5 exceeds 100 percent of capacity from 12pm to 1pm. The on-street parking demand can exceed the measured capacity of 355 spaces in several ways; the parking space length required by some vehicles is less than 22 feet, vehicles were observed double parked, and vehicles were observed parked in designated “no parking” areas.

Overall Occupancy (on-street and off-street). The parking occupancy counts show that 1,196 parking spaces (or 77 percent of **all** spaces) were occupied during the weekday peak hour within the eight-block area of West Annapolis.

3.0 FUTURE PARKING CONDITIONS

3.1 Overview

This section presents an evaluation of future parking conditions in West Annapolis. It includes a review of:

- Future land uses.
- Future on-and off-street parking supply.
- Future parking demands within each block.
- Future parking surpluses/deficits within each block.

3.2 Land Uses

The City of Annapolis Planning and Zoning Department provided information related to a development proposal for an 18,000 S.F. office building to be located on Forbes Street and Giddings Avenue, within Block 8. This building will displace 48 existing surface parking spaces that are 75 percent occupied (36 parked vehicles) during the weekday peak hour. The results are summarized in Table 4.

The proposed office building would be required to supply a total of 60 parking spaces to meet the City zoning ordinance. The hourly parking demand that will be associated with this new building was determined based on the parking indices contained in “Shared Parking”, published by ULI. Based on the ULI data, the 18,000 S.F. office building would occupy 56 spaces (or 93 percent) during the critical peak hour occurring between 2:00 PM and 3:00 PM.

Table 4

West Annapolis Parking Study
Future/Planned Land Use Parking Demand Calculation

Site Data;

Land Use:	General Office	
Size (1):	18,000	S.F.
Location:	Block 8	
Parking Requirement (2):	3.33	spaces/1,000 S.F. GFA
Code (Max) Parking Demand (3):	60	spaces
Parking Supply:	60	spaces
Displaced Parking Supply:	48	spaces
Peak hour Parking Demand Displaced: (4)	36	vehicles

Notes: (1) Information provided by the City of Annapolis.

(2) Based on City of Annapolis Code.

(3) All spaces assumed to be reserved throughout the day.

(4) Based on field data.

3.3 Future Parking Demand

Overview. Future parking demand was estimated on an hourly basis for the entire study area to include the planned office building on Block 8. The parking demand and supply was compared for each block. The number of spaces required to maintain adequate capacity (85 percent) was calculated to determine parking demand that would be displaced from each block. The results are summarized on Tables 5 and 6.

3.4 Future Parking Surpluses/(Deficits)

Future Parking surpluses and/or deficits were calculated for each block within the study area and within each block based on the parking demand and the target capacity of 85 percent.

Table 5 indicates that within the **off-street parking lots** the parking demand displacement of two spaces in Block 3 and 31 spaces in Block 8 (33 total spaces) would be necessary to allow the off-street parking lots to maintain a practical capacity of 85 percent. This demand displacement will result in an increase demand of 33 spaces for the on-street parking supply since all of the off-street lots are privately owned and limited to a specific tenants use.

Table 6 indicates that the future deficiencies of the **on-street parking** within Blocks 4, 5, 6, and 7 would cause a demand displacement of 63 total spaces.

The future peak hour surplus or deficit in each block for both the on-street (curb parking) and off-street parking is shown in Figure 4.

The total future parking displacement for the eight-block study area was calculated and compared to the amount of reserve on-street parking. Table 7 indicates that the future deficiencies of on-and off-street parking combined would cause a total demand displacement of 96 spaces. There is a surplus of on-street parking in Blocks 1, 2, and 3. Assuming that the displaced parking demand is distributed and met among the various blocks with excess on-street parking supply, there will be an overall parking supply **deficit** of 22 spaces within the study area. The parking displacement by block is shown in Figure 5.

Table 5

West Annapolis Parking Study

Future Parking Demand Summary (spaces), by Block for Private, Off-Street Parking

Block	Peak Hour Parking Demand (Private, off-street) (spaces)	Parking Supply (Private, off-street) (spaces)	Surplus/Deficit (Private, off-street) (spaces)	Percent Parking Occupancy Surplus/Deficit (Private, off-street)	Percent Parking Supply Surplus/Deficit (Private, off-street)	Parking Demand Displacement Required to Attain 15% Surplus
Block 1	0	0	0	0%	0%	0
Block 2	32	42	10	76%	24%	0
Block 3	24	26	2	92%	8%	2
Block 4	46	86	40	53%	47%	0
Block 5	136	192	56	71%	29%	0
Block 6	144	199	55	72%	28%	0
Block 7	219	266	47	82%	18%	0
Block 8 (1)	370	399	29	93%	7%	31
Total	971	1210	239	80%	20%	33

Notes: (1) Includes forcasted parking demand for 18,000 S.F. office, net parking supply of 60 spaces, and reduction of 36 displaced vehicles.

Table 6

West Annapolis Parking Study

Future Parking Demand Summary (spaces), by Block for Public, On-Street Parking

Block	Peak Hour Parking Demand (Public, on-street) (spaces)	Parking Supply (Public, on-street) (spaces)	Surplus/Deficit (Public, on-street) (spaces)	Percent Parking Occupancy (Public, on-street)	Percent Parking Supply Surplus/Deficit (Public, on-street)	Parking Demand Displacement Required to Attain 15% Surplus
Block 1	15	58	43	26%	74%	0
Block 2	39	76	37	51%	49%	0
Block 3	20	40	20	50%	50%	0
Block 4	26	18	-8	144%	-44%	12
Block 5	42	43	1	98%	2%	5
Block 6	49	56	7	88%	13%	1
Block 7	41	44	3	93%	7%	4
Block 8 (1)	53	20	-33	265%	-165%	41
Total	285	355	70	80%	20%	63

Notes: (1) Includes forcasted parking demand for 18,000 S.F. office, net parking supply of 60 spaces, and reduction of 36 displaced vehicles.

Table 7

West Annapolis Parking Study
Future Parking Demand Summary (spaces), by Block

Block	Total Parking Demand Displacement Required to Attain 15% Surplus (Off-Street and On-Street)	On-Street Parking Surplus	Parking Deficit
Block 1	0	34	0
Block 2	0	26	0
Block 3	2	14	0
Block 4	12	0	-12
Block 5	5	0	-5
Block 6	1	0	-1
Block 7	4	0	-4
Block 8 (1)	72	0	-72
Total	96	74	-94
Overall Parking Surplus/Deficit (spaces)		-22	

Notes: (1) Includes forcasted parking demand for 18,000 S.F. office, net parking supply of 60 spaces, and reduction of 36 displaced vehicles.

(2) On-street parking adjustments.

4.0 PARKING POLICIES

4.1 Overview

This chapter discusses policy-related issues, which include:

- The importance of short- vs. long-term parking.
- Parking fees.
- Time limits/parking permits.
- Providing additional parking spaces.
- Parking location.
- Parking promotion.
- Shared rides and transit.
- Zoning ordinance modifications.
- Mitigation Measures.

4.2 Parking Hierarchy

Short-term parking is generally two to four hours, generated by retail customers, restaurant patrons, guests, and visitors. Long-term parking is generally over four hours, generated primarily by employees.

Short-term parking spaces should be provided close to a visitor/s final destination (generally within 500 feet), on the street in front of retail shops and restaurants, in adjacent surface parking lots, or on the first level(s) of multi-level parking structures.

On-street, metered parking should be priced to encourage high turnover for short-term parking and discourage all-day employee parking. Off-street lots and garages should be managed to encourage long-term parking for employees and others parking for more than two (2) hours.

4.3 Parking Fees

Fees for on-street, metered parking within the City of Annapolis are generally $0.25 per ¼ to ½ hour for up to two (2) hours. The Navy Marine Corp Stadium parking lot, adjacent to the District Court and Court of Appeals buildings, is a flat fee of $ 4.00 per day.

The current fee structure of the Stadium parking lot does not appeal to patrons of the District Court and Court of Appeals due to the single fee structure charged to short-term parkers. Many of the Courthouse patrons park in Block 8 of West Annapolis, using the existing on- and off-street parking.

The Stadium parking charges should be modified to encourage short term parking, reducing the demand in West Annapolis.

4.4 Time Limits and Parking Permits

There are no time limits or permits required for parking within the majority of West Annapolis. Only a portion of the on-street parking on Giddings Avenue is designated for two-hour parking. This time restriction is typical of other downtown locations. Time limitations through signing and/or meters should be considered in the blocks with primarily business/commercial uses.

Time limitations through the use of standard signing and/or residential parking permits should be considered in the streets serving primarily residential uses. If residential parking is a considered option it should be implemented beyond the study limits and into adjacent blocks of the study area. A potential mitigation measure would be the issuance of residential parking permits within West Annapolis and would require coordination with the City and community.

4.5 Walking Distance

Acceptable walking distances are a function of many factors, including trip purpose, type of parker, line of sight to destination, weather protection, feeling of safety and security, user expectations, and other factors. Five hundred (500) feet is generally accepted as the maximum acceptable walking distance for customers at suburban regional shopping centers. Eight hundred (800) to 1,000 feet is probably the maximum acceptable walking distance in West Annapolis. The typical block size in West Annapolis is approximately 450 to 600 feet in length and width, with intermediate driveways. On average, commercial patrons walk approximately 300 to 400 feet, if they are parking on the street and block of their destination. Those who park on the street usually have a direct line of sight to their destination. Given the

pleasant environment within West Annapolis, it is likely that patrons would walk several blocks to their destination.

4.6 Provision of Additional Parking Spaces

A future deficit of approximately 22 spaces is anticipated, with the construction of the future office building. The site area should be evaluated to determine if additional on-street spaces could be provided for the displaced parking demand. This could possibly be achieved by providing parking on the Forbes Street frontage, and re-striping the parking on Forbes Street adjacent to Graul's grocery store.

4.7 Transit

Providing transit/shuttle service into West Annapolis would provide an alternate means of transportation to the area and help reduce the long term parking demand created by employees and short-term demand created by visitors and patrons.

4.8 Zoning Ordinance Modifications

The City Zoning code does not distinguish between general office space and medical office space for the number of parking spaces required. Medical office space typically requires more spaces per 1,000 square feet of space compared to general office space. The need arises from the number of visitors to medical office space is substantially higher than general offices. Typically, medical office space requires 1½ to 2 times the amount of parking spaces compared to general office space. The majority of office use in the West Annapolis study area is medical, putting a much higher demand on the available on and off-street parking supply. It is recommended that the City parking requirements be modified to increase the number of spaces required for medical office space from 1 parking space per 300 square feet of gross floor area to 1 space per 150 square feet of gross floor area. Existing businesses should also be reviewed to ensure that they are in compliance with City occupancy permits.

4.9 Community Outreach Program

As part of this study, a town meeting was held with local business owners and residents of West Annapolis to discuss the initial survey

findings and the communities parking issues and concerns. A list of the communities' issues/concerns includes the following:

1. Encroachment of on-street business parking into residential areas
2. Illegal parking
3. Insufficient off-street parking for business users
4. On-street Parking demand increasing.

Residents and business owners alike have noted an increase in the demand in recent years for on-street parking along Monterey Avenue, blocks 3 and 6; along Giddings Avenue and Annapolis Street, blocks 2, 4, 5, 7, and 8. The change is perceived to be from the relocation of a medical office to Monterey Avenue, the increase in business activity at several hair salons on Annapolis Street, business owners restricting the off-street parking to patrons only, forcing employees to park on-street, and the District Courthouse visitors. Illegal parking, such as blocking driveways, parking too close to intersections, and double parking were also noted by the community. Insufficient off-Street parking for the business along Giddings and Forbes Street was a concern in relation to the planned office building.

5.0 RECOMMENDATIONS

Based on the existing field data collected, forecasted parking demand, the supply/deficit analysis, and the community outreach program, the following mitigation measures were developed. These measures reflect a tiered approach in addressing the parking situation in West Annapolis, and will require monitoring to ensure that appropriate results are achieved. The recommendations can be implemented area wide or on a street-by- street basis.

5.1 Recommended Area Wide Mitigation Measures

Parking Limits. Implementation of timed on-street parking for visitors with a possible limit of two hours could be administered by installing signs along any of the streets within the study area. The intent is to eliminate long-term parkers that frequent the District Court and Court of Appeals buildings and employees, making spaces available for patients, visitors and retail patrons. This measure is a simple, cost-effective approach that could be easily provided. Enforcement of this measure is required to ensure compliance.

Metered Parking. Install two-hour metered parking within specific areas of West Annapolis. We recommend that the fee structure be similar to the historic district of downtown Annapolis (.25 per half hour). While this is an effective method for deterring long-term parking, meter installation, delineation of parking spaces, and enforcement are required. This method provides revenues that can offset some of the installation, maintenance, and enforcement costs.

Navy Stadium Parking. Negotiations with the operator of the Navy Marine Corp Stadium parking facility should be undertaken to investigate changing to a variable fee system with hourly charges. Lower fees for short-term parking would encourage the courthouse patrons to use the Stadium parking lot rather than West Annapolis.

Shuttle/Transit. The implementation of a shuttle system or expansion of the existing transit system, incorporating the stadium parking area should also be considered to provide employees and patrons with easy access to West Annapolis.

Encourage Shared Rides and Transit Use. A program for business owners of West Annapolis to encourage employees to use transit or ride sharing should be implemented. This would require a program that would provide transit information to business owners, coordinate rideshare programs, and gather information to ensure the program utilization. This would reduce the demand for on- and off-street parking, freeing space for visitor and patron parking. It would further reduce the infiltration of parking demand into the adjacent

residential streets.

Residential Parking Permits. A potential measure would be to introduce the City Residential Parking Permit Program into West Annapolis. This program allows **non-residents** to park for two hours only during a specified time, and allows **residents** to park without restriction. If this program is selected it should be extended well into the adjacent residential neighborhood to discourage non-residents from parking further into the Wardour area of West Annapolis. This program requires the residents to bear some of the costs in a yearly fee. Installation of residential parking signs and enforcement are required. Implementation of this program also requires consensus from the residents and City Council approval.

Parking Promotion. A program to inform businesses, residents, and visitors to West Annapolis should be developed to maximize the efficiency of existing and future parking systems. This could be accomplished through fliers, pamphlets, and other information posted in businesses and surrounding buildings. This program should reflect the measures implemented and also provide for feedback from the community to address future issues. This program could be administered through a committee that represents both businesses and residents.

Code Enforcement/Future Development. Some of the existing businesses within West Annapolis may not adhere to current zoning approvals related to number of employees, parking requirements, hours of operation, and number and type of tenants. Therefore, it may be necessary for the City to visit various commercial tenants to ensure that businesses are in compliance with the City Code. The City of Annapolis Zoning Code should be changed to reflect the different parking demands of different types of office uses, i.e. medical office and dental office have a greater parking demand than general office users. Any revitalization of existing buildings in the West Annapolis area should be reviewed as to the type of tenant that will be permitted. Requirements for replacement of displaced parking should be instituted in addition to meeting current zoning requirements. The parking information contained in this report should be used to evaluate future development proposals and their associated impact to existing business, resident and visitor parking.

5.2 Recommended Mitigation Measures By Street

♦ Forbes Street - Post "No Parking" signs to restrict on-street parking from restricting access to private driveways. Install parking meters or post two hour parking restrictions from 9AM to 6PM weekdays to limit use of parking by employees and Courthouse visitors. Provide angled parking between Giddings Avenue and Graul's parking lot.

♦ Ridgley Avenue - Pave the grassy road frontages in the block between Melvin Avenue and Giddings Avenue to create additional on-street parking. Post two hour parking limits or install parking meters to encourage short term parking.

♦ Annapolis Street - Post two hour parking limits or install parking meters to encourage short term parking.

♦ Monterey Avenue - Post "No Parking" signs to restrict on-street parking from restricting access to private driveways. Post two hour parking restrictions from 9AM to 6PM weekdays to limit use of parking by employees. Area potential for residential parking on west side metered parking on east side of street.

♦ Melvin Avenue - Post "No Parking" signs to restrict on-street parking from restricting access to private driveways. Post two hour parking restrictions from 9AM to 6PM weekdays to limit use of parking by employees.

♦ Giddings Avenue - Post "No Parking" signs to restrict on-street parking from restricting access to private driveways. Install parking meters or post two hour parking restrictions from 9AM to 6PM weekdays to limit use of parking by employees and Courthouse visitors.

Appendix A

Existing Parking Occupancy Counts Collected by Wells & Associates on Thursday, June 28, 2001

STREET PARKING

TIME	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Total Availble	4	18	31	28	23	20	20	15	18	25	29	21	7	19	7	14	16	34	10	15	9	19
Feet	90	409.9	693.10	626.3	512.2	439.4	455.9	343.2	397.8	559.10	646.10	462.10	161.10	429.11	160.1	317.2	355.2	759.10	227.6	624.2	197.8	431.2
7:00-8:00	1	2	13	9	5	5	7	8	6	3	10	6	5	0	4	2	6	4	4	0	4	10
8:00-9:00	1	3	7	8	6	7	4	8	7	7	18	9	4	13	5	11	13	13	8	5	7	18
9:00-10:00	1	2	4	7	6	7	5	6	11	6	17	9	5	20	6	21	13	24	10	19	8	20
10:00-11:00	1	2	3	5	8	4	24	3	10	6	20	7	7	17	7	23	17	25	10	14	7	20
11:00-Noon	1	2	4	5	7	6	22	5	12	10	20	8	7	19	7	22	13	31	10	17	7	19
Noon-1:00	1	2	4	4	6	6	21	8	10	21	26	9	6	20	8	26	15	27	7	12	7	19
1:00-2:00	1	2	5	4	6	12	21	7	12	17	23	10	7	19	7	24	14	27	7	10	7	16
2:00-3:00	1	3	5	4	5	6	22	6	8	17	24	6	7	21	6	23	13	29	9	22	7	16
3:00-4:00	1	0	6	4	4	5	23	6	6	11	26	6	5	21	7	23	12	28	9	22	7	19
4:00-5:00	1	2	6	3	4	4	22	5	5	18	23	5	7	25	6	22	14	27	7	17	8	13
5:00-6:00	1	1	8	3	6	3	20	6	5	13	22	5	8	18	4	14	12	18	8	13	5	12
6:00-7:00	1	1	9	5	6	2	14	7	4	12	17	6	1	12	3	10	10	17	7	9	3	7

OFF-STREET PARKING

TIME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Total Availble	**15**	**21**	**34**	**19**	**7**	**4**	**6**	**15**	**6**	**6**	**10**	**29**	**6**	**4**	**82**	**6**	**10**	**24**	**8**
7:00-8:00	5	6	3	4	0	0	0	2	0	0	0	1	0	0	11	0	0	5	9
8:00-9:00	3	8	3	5	5	0	0	2	0	0	0	11	0	0	46	0	0	13	7
9:00-10:00	2	9	9	13	12	2	1	4	0	2	2	10	2	0	70	0	0	16	7
10:00-11:00	9	8	16	12	1	2	1	4	0	2	2	20	2	2	79	0	2	15	9
11:00-Noon	9	10	14	15	2	3	1	4	1	2	1	28	2	1	80	2	4	21	8
Noon-1:00	9	18	24	14	2	2	1	6	1	3	1	20	6	0	76	1	2	15	14
1:00-2:00	6	16	31	19	1	1	2	7	2	3	1	20	7	0	78	1	2	18	11
2:00-3:00	9	10	22	21	3	0	1	5	2	4	3	24	7	0	85	1	2	19	7
3:00-4:00	7	7	25	19	2	1	1	6	2	4	2	27	3	0	84	1	2	21	4
4:00-5:00	10	6	18	19	3	1	1	6	1	3	2	23	7	1	82	1	2	20	4
5:00-6:00	10	7	14	14	1	1	1	4	1	2	2	10	6	0	78	5	2	16	7
6:00-7:00	7	5	10	14	2	1	0	3	1	2	1	6	3	0	63	3	1	10	6

TIME	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
Total Availble	**7**	**10**	**15**	**11**	**13**	**70**	**51**	**36**	**39**	**39**	**38**	**92**	**5**	**45**	**29**	**48**	**260**	**29**	**10**	**8**	**4**	**27**
7:00-8:00	1	0	0	0	0	1	0	4	7	6	11	23	0	5	2	10	40	0	0	0	0	3
8:00-9:00	0	1	1	1	2	2	11	6	15	12	23	64	0	20	14	15	85	3	0	1	0	4
9:00-10:00	2	10	7	2	8	21	25	21	26	25	36	86	1	35	18	26	166	15	9	3	1	7
10:00-11:00	2	9	9	6	11	34	37	24	31	37	30	92	1	43	29	33	184	22	7	3	1	11
11:00-Noon	3	8	11	6	16	31	40	26	32	20	37	90	3	43	28	29	176	22	8	5	3	14
Noon-1:00	4	6	13	6	8	46	28	24	25	16	26	83	4	31	28	26	199	17	4	5	1	15
1:00-2:00	1	9	13	5	7	45	27	26	25	27	21	84	8	28	21	38	241	17	7	3	1	15
2:00-3:00	0	7	11	8	10	49	35	24	24	32	36	90	6	26	28	36	250	24	6	6	1	13
3:00-4:00	0	9	14	7	12	58	37	27	38	39	29	88	5	26	29	40	220	23	6	5	1	14
4:00-5:00	2	3	9	3	11	55	40	29	28	31	29	89	6	24	25	35	168	22	5	6	1	12
5:00-6:00	0	3	3	3	11	34	23	28	24	24	29	81	3	18	21	25	140	19	2	4	2	10
6:00-7:00	0	2	2	2	5	38	17	16	21	19	23	64	3	16	13	18	177	11	2	2	1	6

West Annapolis Parking Study
Existing Weekday Afternoon Parking Occupancy (Spaces), by Block

Time Period	Weekday Parking Occupancy Counts Block 1 Private Off-Street	Block 1 Private On-Street	Block 1 Total	Block 2 Private Off-Street	Block 2 Private On-Street	Block 2 Total	Block 3 Private Off-Street	Block 3 Private On-Street	Block 3 Total	Block 4 Private Off-Street	Block 4 Private On-Street	Block 4 Total	Block 5 Private Off-Street	Block 5 Private On-Street	Block 5 Total	Block 6 Private Off-Street	Block 6 Private On-Street	Block 6 Total	Block 7 Private Off-Street	Block 7 Private On-Street	Block 7 Total	Block 8 Private Off-Street	Block 8 Private On-Street	Block 8 Total	Summary Private Off-Street	Summary Private On-Street	Summary Total
7:00 AM - 8:00 AM	0	12	12	14	22	36	4	16	20	3	4	7	29	13	42	1	15	16	51	11	62	57	3	60	159	96	255
8:00 AM - 9:00 AM	0	18	18	15	17	32	10	17	27	13	12	25	69	32	101	21	32	53	121	29	150	134	8	142	383	165	548
9:00 AM - 10:00 AM	0	20	20	18	13	31	25	21	46	23	21	44	104	34	138	88	46	134	207	43	250	246	15	261	711	213	924
10:00 AM - 11:00 AM	0	17	17	28	31	59	13	21	34	35	23	58	123	37	160	128	47	175	225	40	265	290	15	305	842	231	1073
11:00 AM - 12:00 PM	0	15	15	33	33	66	17	22	39	43	24	67	132	40	172	134	54	188	221	41	262	279	14	293	859	243	1102
12:00 PM - 1:00 PM	0	17	17	42	41	83	16	23	39	40	27	67	136	44	180	124	46	170	184	41	225	288	13	301	830	252	1082
1:00 PM - 2:00 PM	0	20	20	37	42	79	20	26	46	43	27	70	142	40	182	123	45	168	194	34	228	336	12	348	895	246	1141
2:00 PM - 3:00 PM	0	15	15	32	39	71	24	20	44	46	26	72	136	42	178	144	49	193	219	41	260	346	17	363	947	249	1196
3:00 PM - 4:00 PM	0	8	8	28	38	66	21	19	40	46	24	70	137	43	180	160	48	208	233	43	276	320	17	337	945	240	1185
4:00 PM - 5:00 PM	0	7	7	28	43	71	22	18	40	45	26	71	129	43	172	143	47	190	218	36	254	258	15	273	843	235	1078
5:00 PM - 6:00 PM	0	7	7	27	43	70	15	19	34	27	18	45	122	37	159	96	34	130	194	25	219	207	12	219	688	195	883
6:00 PM - 7:00 PM	0	7	7	18	33	51	16	12	28	17	17	34	93	28	121	77	29	106	148	15	163	227	9	236	596	150	746
Maximum Demand	0	20	20	42	43	83	25	26	46	46	27	72	142	44	182	160	54	208	233	43	276	346	17	363	947	252	1196
Peak Hour Demand	0	15	15	32	39	71	24	20	44	46	26	72	136	42	178	144	49	193	219	41	260	346	17	363	947	249	1196
Weekday Percent Occupancy																											
Parking Supply	0	58	58	42	76	118	26	40	66	86	18	104	192	43	235	199	56	255	266	44	310	387	20	407	1198	355	1553
7:00 AM - 8:00 AM	0.00	21%	21%	33%	29%	31%	15%	40%	30%	3%	22%	7%	15%	30%	18%	1%	27%	6%	19%	25%	20%	15%	15%	15%	13%	27%	16%
8:00 AM - 9:00 AM	0.00	31%	31%	36%	22%	27%	38%	43%	41%	15%	67%	24%	36%	74%	43%	11%	57%	21%	45%	66%	48%	35%	40%	35%	32%	46%	35%
9:00 AM - 10:00 AM	0.00	34%	34%	43%	17%	26%	96%	53%	70%	27%	117%	42%	54%	79%	59%	44%	82%	53%	78%	98%	81%	64%	75%	64%	59%	60%	59%
10:00 AM - 11:00 AM	0.00	29%	29%	67%	41%	50%	50%	53%	52%	41%	128%	56%	64%	86%	68%	64%	84%	69%	85%	91%	85%	75%	75%	75%	70%	65%	69%
11:00 AM - 12:00 PM	0.00	26%	26%	79%	43%	56%	65%	55%	59%	50%	133%	64%	69%	93%	73%	67%	96%	74%	83%	93%	85%	72%	70%	72%	72%	68%	71%
12:00 PM - 1:00 PM	0.00	29%	29%	100%	54%	70%	62%	58%	59%	47%	150%	64%	71%	102%	77%	62%	82%	67%	69%	93%	73%	74%	65%	74%	69%	71%	70%
1:00 PM - 2:00 PM	0.00	34%	34%	88%	55%	67%	77%	65%	70%	50%	150%	67%	74%	93%	77%	62%	80%	66%	73%	77%	74%	87%	60%	86%	75%	69%	73%
2:00 PM - 3:00 PM	0.00	26%	26%	76%	51%	60%	92%	50%	67%	53%	144%	69%	71%	98%	76%	72%	88%	76%	82%	93%	84%	89%	85%	89%	79%	70%	77%
3:00 PM - 4:00 PM	0.00	14%	14%	67%	50%	56%	81%	48%	61%	53%	133%	67%	71%	100%	77%	80%	86%	82%	88%	98%	89%	83%	85%	83%	79%	68%	76%
4:00 PM - 5:00 PM	0.00	12%	12%	67%	57%	60%	85%	45%	61%	52%	144%	68%	67%	100%	73%	72%	84%	75%	82%	82%	82%	67%	75%	67%	70%	66%	69%
5:00 PM - 6:00 PM	0.00	12%	12%	64%	57%	59%	58%	48%	52%	31%	100%	43%	64%	86%	68%	48%	61%	51%	73%	57%	71%	53%	60%	54%	57%	55%	57%
6:00 PM - 7:00 PM	0.00	12%	12%	43%	43%	43%	62%	30%	42%	20%	94%	33%	48%	65%	51%	39%	52%	42%	56%	34%	53%	59%	45%	58%	50%	42%	48%
Maximum Demand	0	34%	34%	100%	57%	70%	96%	65%	70%	53%	150%	69%	74%	102%	77%	80%	96%	82%	88%	98%	89%	89%	85%	89%	79%	71%	77%
Peak Hour Demand	0	26%	26%	76%	51%	60%	92%	50%	67%	53%	144%	69%	71%	98%	76%	72%	88%	76%	82%	93%	84%	89%	85%	89%	79%	70%	77%

Notes: (1) Based on data collected by Wells & Associates on Thursday, June 28, 2001..